

Application No.: 09/856,414
Amendment dated: November 8, 2004
Reply to Office Action of August 6, 2004
Attorney Docket No.: 21295.24

This listing of claims will replace all prior versions and listings of claims in this application:

a.) Listing of Claims

1. (currently amended) A method for setting the system parameters of a confocal laser scanning microscope, setting of the system parameters being accomplished by way of a control computer, ~~characterized by the following steps comprising:~~

- creation of a user interface interactively with ~~the~~ a user;
- input of at least one specimen parameter, at least one selectable system parameter by the user, related to at least one definable problem regarding image acquisition ;
- proposal of other system parameters, optimization paths, and imaging strategies regarding image acquisition, wherein the system parameter is at least one of an optimum irradiation intensity at the focus, selection of the objective to be used, a detection pinhole radius, and photomultiplier voltage;
- selection of a proposal by the user; and
- automatic setting of the system parameters of a selected system setting or imaging strategy.

2. (currently amended) The method as defined in Claim 1, wherein ~~the~~ an input of at least one of the following parameters determines ~~the~~ a specimen dimension to be imaged, ~~the~~ specimen region to be imaged, ~~the~~ number of optical steps, ~~the~~ a specimen property to be imaged, and ~~the~~ a detection method.

3. (currently amended) The method as defined in Claim 2, ~~wherein the~~ further comprising a detection method ~~involves~~ involving alternatively the use of a fluorescence method and a reflection method.

4. (original) The method as defined in Claim 1, wherein the proposal step concerns the use of a suitable objective having the highest possible numerical aperture; the maximum resolution achievable with the selected objective, and the present resolution on the basis

Application No.: 09/856,414
Amendment dated: November 8, 2004
Reply to Office Action of August 6, 2004
Attorney Docket No.: 21295.24

of specific and previously set system parameters, are reported to the user; and the number of pixels per image plane is proposed to the user.

5. (currently amended) The method as defined in Claim 1, wherein the specimen property to be determined serves to ascertain the optimum irradiation intensity; ~~and the~~ and an optimum irradiation intensity is proposed to the user.

6. (original) The method as defined in Claim 1, wherein for setting a detection pinhole diameter, an optimized value at which the image acquisition resolution is maximal, while the image acquisition signal-to-noise ratio is still usable, is proposed to the user.

7. (currently amended) The method as defined in Claim 1, wherein the creation of the user interface ~~{?is such that}~~ is such that upon selection of at least one system parameter all those system parameters that are influenced by the selection are presented for the user, and the user is also informed as to how, on the basis of the selection of a system parameter, an image acquisition can be performed with the best possible quality.

8. (original) The method as defined in Claim 1, wherein at least one criterion that is important for the application can be defined for the optimization thereof; and that based on this definition, the further system parameters are interactively proposed and/or automatically set.

9. (original) The method as defined in Claim 8, wherein the predefined criterion is the signal-to-noise ratio that is to be achieved.

10. (currently amended) The method as defined in Claim 1, wherein assistance or solutions for the at least one definable ~~predefined~~ problem ~~situations~~ are offered by means of the user interface.

Application No.: 09/856,414
Amendment dated: November 8, 2004
Reply to Office Action of August 6, 2004
Attorney Docket No.: 21295.24

11. (currently amended) The method as defined in Claim 10, wherein the definable problems ~~problem situations~~ are the following problems:

- "the specimen (in the case of fluorescence specimens) bleaches excessively"; and/or
- "the image data are noisy"; and/or
- "the measurement time is too long"; and/or
- "the resolution is too low."

12. (original) The method as defined in Claim 1, wherein the at least partially mutually dependent system parameters are determined by means of an algorithm.

13. (original) The method as defined in Claim 1, wherein the system parameters are retrieved, in consideration of the definitions, from an expert system stored in a database.

14. (original) The method as defined in Claim 1, wherein the system parameters are ascertained, in consideration of the definitions, using fuzzy logic, and are set after selection or automatically.

15. (original) The method as defined in Claim 1, wherein the creation of a user interface for the user comprises an activatable and interfacing teaching program for optimal - preferably specimen-specific and/or problem-specific - system setting and/or imaging strategy.

Application No.: 09/856,414
Amendment dated: November 8, 2004
Reply to Office Action of August 6, 2004
Attorney Docket No.: 21295.24

16. (new) A method for setting the system parameters of a confocal laser scanning microscope, wherein the setting of system parameters is accomplished by way of a control computer, comprising the steps of:
- providing a user interface by which settings of system parameters are created interactively between the user and a control computer;
 - inputting at least one specimen parameter, and at least one selectable system parameter by the user, addressing at least one definable problem regarding image acquisition;
 - proposing via the user interface other system parameters, optimization paths, and imaging strategies regarding image acquisition; wherein the system parameters are retrieved, in consideration of the definitions, from an expert system stored in a database;
 - selecting a proposal by the user; and
 - automatically setting the system parameters of a selected system setting or imaging strategy.